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REMARKS

I. Status of the claims

Claims 1-9 and 11-14 are pending. Claim 10 has been cancelled and claims 1 and 13 have been amended. Claim 1 has been amended to recite a preferred electrical component and a preferred impregnation process. Support for this amendment may be found on page 3, lines 14-26 of the specification and in original claim 10.

II. Rejection of claim 13 under 35 U.S.C. § 112, second paragraph

The examiner rejected claim 13 under 35 U.S.C. § 112 in view of the term "and" recited before the term "electrical" in line 2 of the claim. Per the examiner's suggestion, the term "and" was replaced with the term "an." The applicants therefore respectfully request that the examiner withdraw this rejection.

III. Rejection of claim 4 under 35 U.S.C. § 112, second paragraph

The examiner rejected claim 4 under 35 U.S.C. § 112, second paragraph. The examiner states that the phrase "the coats" still appears in claim 4. However, the applicants amended this phrase in the last response from the plural form to the singular "the coat." The claim currently remains recited in the singular. The strikethrough line appearing through the "s" in the term "coats" may have gone unnoticed by the examiner in the previous response. Since this claim language has been corrected, the applicants respectfully request the examiner to withdraw this rejection.

IV. Informalities in the Specification

The examiner has objected to the second example on page 11 of the specification being identified as "Example 3 (E3)." Per the examiner suggestion, the applicants have amended this example to "Example 2 (E2)."

The examiner has objected to the resin Dobeckan MF 8001-UV disclosed by the applicants on page 10, lines 14-17 of the specification as not sufficiently identifying the resin. The applicants have amended the specification by additionally describing the resin as a monomer free, one-component impregnating resin based on an especially modified unsaturated polyester resin. The applicants also provide a provisional data sheet on Dobeckan MF 8001 UV-2 describing the resin by this definition.

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V. Rejection under 35 U.S.C. § 103(a) over Buckley

The examiner rejected claims 1-14 under 35 U.S.C. § 103(a) as being unpatentable over European Patent No. EP 0 064 147 to Buckley et al. ("Buckley"). The examiner states that on pages 2 and 8 of Buckley, the use of IV as well as IR is disclosed. The applicants respectfully traverse this rejection.

Buckley does not teach or suggest hardening or curing with the use of near-infrared radiation. The coatings of Buckley are only "gelled" with infrared or other radiation. See claim 1 and page 2, lines 33 et seq. Buckley describes "gelling" as meaning that the coating is only partially polymerized. See page 2, line 16 et seq. In contrast, the applicants claimed invention relates to coatings that are cured with near-infrared radiation.

In view of the disclosure in Buckley relating to coatings that are not entirely polymerized, *i.e.*, only gelled, one skilled in the art would not possess the requisite motivation to attempt to cure the coating with near-infrared radiation. This is especially true in view of well-known negative affects associated with this type of curing (*e.g.*, such as the danger of surface carbonization, as shown in Example 4 of the present specification).

Accordingly, even if it is accepted that Buckley uses IV as well IR radiation, Buckley nonetheless does not teach or suggest the applicants' claimed invention. The applicants respectfully request that the examiner withdraw this rejection.

VI. Rejection of claims 7-9 under 35 U.S.C. § 103(a) over Buckley in view of Lienert

The examiner rejected claims 7-9 under 35 U.S.C. § 103(a) over Buckley in view of German Application No. DE 196 48 133 A1000 to Lienert ("Lienert"). The applicants respectfully traverse this rejection.

As set forth above, Buckley does not teach or suggest the applicants' claimed invention. Lienert, however, does not cure the deficiencies described in Buckley. Therefore, Buckley in view of Lienert does not render the applicants' claimed invention obvious.

Additionally, Lienert fails to disclose a process of curing a coating with near-infrared radiation. The use of near-infrared radiation, as disclosed in the specification of this application, provides advantages in the context of the considerable amount of energy that is saved, which translates to less costs and less environmental pollution. By the use of near-infrared radiation, purely thermally curable coatings can be formed. While thermally curable

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coatings have been cured in convection ovens, curing with infrared-radiation sources involves a different process. In convection ovens, the temperature in the oven is kept at a certain level throughout the oven, whereas radiation sources concentrate the energy on very limited narrow spots of the substrate. As evidenced by the examples in this application, this typically leads to surface carbonization of the coating. See example 4. As near-infrared radiation is even less energetic than normal infrared radiation, a skilled artisan would have had to increase the focus of the near-infrared energy beam to achieve curing. However, it would have been expected that when the focus of the near-infrared energy beam is increased, surface carbonization, an undesirable property, is also increased. Therefore, because of the formation of surface carbonization, a skilled artisan would not have been motivated to increase the near-infrared radiation. It is an unexpected result of the claimed invention that this does not happen.

Accordingly, since Lienert does not disclose near-infrared radiation, and does not suggest the unexpected results shown in this application, Lienert does not teach or suggest the applicants' claimed invention. The applicants respectfully request that the examiner withdraw this rejection.

VII. Rejection of claims 1-2, 4, 6, 10, and 12 under § 102(b) by Linderoth

The examiner has rejected claims 1-2, 4, 6, 10, and 12 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 4,234,624 to Linderoth et al. ("Linderoth"). The examiner states that Linderoth discloses a process for coating electrical cable with insulation via extrusion of the polymer onto the substrate and thermally curing under pressure by cross-linking with NIR radiation. The applicants respectfully traverse this rejection.

Linderoth exclusively describes the application of coatings on a conductor by extrusion. Linderoth does not teach or suggest an impregnation step that is achieved through immersion, flooding, vacuum impregnation, vacuum pressure impregnation or trickling, as recited in the applicants' claimed invention.

It is apparent from the disclosure of Linderoth that an impregnation step such as that recited in the applicants' claimed invention would not work in the Linderoth method. Extrusion is done with materials that have a relatively high melting point and thus can be extruded. The applicants' claimed compositions cannot be extruded as they are liquid. See, e.g., example 1, where room temperature of 26° C is applied, or the enclosed data sheet

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describing Dobeckan MF 8001 (page 3, table 1). The polymers of Linderoth, which are mainly polyethylene (e.g., plastic bags), have much higher melting points, and cannot be used in the applicants' methods of the instant invention. Additionally, the term "crosslinking" is used in Linderoth in a different manner than in the applicants' disclosure. A skilled artisan would understand that the term crosslinking is used in Linderoth as another term for vulcanization. See col. 2, lines 9-32. In this passage, the polymer (which, being polyethylene or a copolymer of ethylene and another monomer, has no unsaturated groups) is being described as reacted with a peroxide (or other) in a vulcanization tube under pressure. This description represents a vulcanization reaction, wherein the saturated polymeric chains are crosslinked by "insertion" of peroxides between the chains, thereby creating new bonds, which crosslink formerly separated polymeric chains (analogous to the classic rubber vulcanization).

In contrast, the term "crosslinked" in the applicants' invention refers to the reaction of compounds having unsaturated groups with each other, in order to form crosslinked compounds. Thus, Linderoth's and the applicants' use of the term "crosslinked" are based on entirely different chemical processes.

Furthermore, the crosslinking at near-IR in Linderoth takes place in a vulcanization tube in the presence of, e.g., peroxides and under pressure. So even if similar chemical processes were employed, a skilled artisan would be incapable of knowing whether the use of near-IR could provide the beneficial results shown in the applicants' invention. In the applicants' claimed invention, no pressure is applied to the compounds to be crosslinked and no peroxides need to be employed.

Accordingly, Linderoth fails to teach the applicants' claimed invention, and the applicants respectfully request that the examiner withdraw this rejection.

VIII. Rejection of claims 1-14 under 35 U.S.C. § 103(a) over Buckley in view of Lienert and Linderoth

The examiner has rejected claims 1-4 under 35 U.S.C. § 103(a) as being unpatentable over Buckley, optionally in view of Lienert, and further in view of Linderoth. As set forth above, neither Buckley nor Lienert, nor Linderoth, nor any combination thereof teach or suggest the applicants' claimed invention. Accordingly, the applicants' respectfully request that the examiner withdraw this rejection.

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IX. Rejection of claims 3 and 13 under 35 U.S.C. § 103(a) over Linderoth

The examiner has rejected claims 3 and 13 under 35 U.S.C. § 103(a) as being unpatentable over Linderoth. The applicants discuss Linderoth in section VII of this response, and rely on the remarks set forth in that section to distinguish the applicants' claimed invention from Linderoth. Since Linderoth does not teach or suggest the applicants' claimed invention, the applicants respectfully request that the examiner withdraw this rejection.

X. Rejection of claims 1-2, 6, 9-10, 12, and 14 under 35 U.S.C. § 102(b) by Hwang

The examiner has rejected claims 1-2, 6, 9-10, 12, and 14 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,705,232 to Hwang et al. ("Hwang"). The examiner states that Hwang relates to a process of spin coating dielectric material on to semiconductor integrated circuit substrates with metalized components, where baking and curing are employed. The examiner further states that hot plates in the spin chuck may be used in combination with heat lamps, which may use IR or additional types of IR and UV. The applicants respectfully traverse this rejection.

Hwang, however, only discloses the use of semiconductor devices (microchips/integrated circuits) as acceptable substrates. Hwang does not teach or suggest the use transformers, components with windings, or conducting wires as possible electrical component substrates, as claimed by the applicants. Therefore, Hwang does not anticipate the applicants' claimed invention.

Semiconductor devices, as is well known to those in the art, are very delicate work pieces that need to be treated with utmost care in order to ensure that they do not get damaged during the curing step of the coating process. In contrast, the substrates of the applicants' invention are not considerably delicate and are thus able to withstand much harsher conditions when cured. Therefore, it would not be obvious for a skilled artisan to transfer the curing process taught in Hwang to the substrates of the applicants' invention. Rather, the skilled artisan would be lead to believe that process disclosed in Hwang should be used for semiconductor devices and other delicate substrates that are cured under different conditions.

Accordingly, the disclosure of Hwang fails to teach or suggest the applicants' claimed invention, and the applicants respectfully request that the examiner withdraw this rejection.

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XI. Conclusion

The applicants believe that the amendments and remarks place the application in condition for allowance, and respectfully request that the examiner issue a Notice of Allowance on the pending claims.

Should any issues remain unresolved, the examiner is encouraged to contact the undersigned attorney for the applicants at the telephone number indicated below in order to expeditiously resolve any remaining issues.

Respectfully submitted,

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